

REMARKS

I. Status of Claims

Claims 1-20 are pending. Applicant has amended claims 1, 19, and 20 to recite an additional element "an electric insulation layer positioned externally to said cryostat" and to remove the limitation "wherein the protecting element is tubular." Applicant's amendment is supported by the specification, for example at Figure 1, page 7, line 10, and original claims 1, 19, and 20. Accordingly no new matter has been added by this amendment.

Applicant respectfully acknowledges that the Examiner has indicated that claims 13 and 16 would be allowable if rewritten in independent form including all of the limitations of the base claim.

II. Rejections Under 35 U.S.C. § 102(b)

The Examiner has maintained the rejection of claims 1-5, 10-12, 14, 15, 19, and 20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,562,401 ("Long"), for the reasons disclosed at pages 2-4, 7, and 8 of the Office Action. Applicant traverses this rejection for at least the reasons presented below.

A rejection under § 102 is proper only when the claimed subject matter is identically described or disclosed in the prior art. *In re Arkley*, 455 F.2d 586, 587 (C.C.P.A. 1972). "For anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly." M.P.E.P. § 706.02. Moreover, in order to anticipate the claimed invention, a reference must clearly and unequivocally disclose the claimed composition to one of ordinary skill in the art "without

any need for picking, choosing and combining various disclosures.” *In re Arkley*, 455 F.2d at 587. Importantly, missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

Applicant submits that Long fails to disclose, at a minimum, a cryostat, wherein (1) “a protecting element [is] positioned between the superconducting conductor and the inner tube of the cryostat;” (2) “an electric insulation layer [is] positioned externally to said cryostat;” and (3) said “cryostat [is] positioned externally to the superconducting conductor,” as required by the amended claims. While Applicant’s claims permit more than one cryostat to be present in the superconducting cable in view of the term “comprising,” the claims require at least one cryostat to meet these claim requirements.

In Figure 2, Long appears to disclose two cryostats, **130** and **170**, which are positioned externally to the superconducting conductor **110**. According to the Examiner, the solid dielectric supports **150** qualify as the protecting element, positioned between the superconducting conductor **110** and the inner tube of the cryostat **170**. Office Action at 2. However, Long teaches that its electrical insulation, *i.e.*, the dielectric cooling fluid, is the channel between the two cryostats. Col. 2, lines 56-70. The dielectric cooling fluid in combination with the solid dielectric supports is the only electric insulation taught by Long. In other words, in Long, the electric insulation is always positioned internally to the cryostat **170**. In view of this disclosure, Long does not teach that “an electric insulation layer [is] positioned externally to said cryostat.”

Even if the Examiner considers cryostat **130** to meet the cryostat limitation of the claims (and it does not), Applicant submits that Long does not anticipate. If cryostat **130**

were selected, then, at a minimum, there would be no protecting element, positioned between the superconducting conductor **110** and the inner tube of the cryostat **130**, which has no inner tube.

Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claims 1-5, 10-12, 14, 15, 19, and 20 under 35 U.S.C. § 102(b).

III. Rejections Under 35 U.S.C. § 103

The Examiner has maintained the rejection of claims 6-9 under 35 U.S.C. §103(a) as unpatentable over Long, claim 17 as unpatentable over Long in view of U.S. Patent No. 6,512,311 ("Metra"), and claim 18 as being unpatentable over Long in view of US 6,509,819 ("Snitchler"), for the reasons disclosed at pages 4-8 of the Office Action. Applicant respectfully traverses these rejections for at least the reasons presented below.

To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, the Examiner bears the burden of establishing each of three requirements. First, the references must teach or suggest each and every element and limitation recited in the claims. See M.P.E.P. § 2143.03. Second, the Examiner must establish that some suggestion or motivation exists, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the references to achieve the presently claimed invention. See M.P.E.P. § 2143.01. Third, the Examiner must establish a reasonable expectation of success for the proposed combination. See M.P.E.P. § 2143.02.

At a minimum, the Examiner cannot establish that the cited references teach or suggest, whether alone or in combination, each and every element recited in the claims. See M.P.E.P. § 2143.03. As discussed above and incorporated by reference herein in full, Long fails to teach or suggest, at a minimum, a cryostat that meets all of the claim limitations. Moreover, Applicant submits that the secondary references do not correct this deficiency. For example, Metra also discloses a cryostat positioned externally to the electric insulation layer (see Figures 1-3), and Snitchler does not discuss superconducting cable compositions.

Finally, Applicant submits there is no motivation to modify the teachings of Long to meet the requirements of amended claims. According to Long, it is essential for the cryostat to be external to the liquid dielectric layer so as to prevent ambient heat leakage. See *e.g.*, Abstract, col. 2, lines 15-17, col. 3, lines 45-49, col. 4, lines 19-22. Since such insulation serves the purposes identified by Long, there is no motivation to modify the structure.

Accordingly, Applicant submits that the Examiner cannot satisfy the burden of establishing a *prima facie* case of obviousness with respect to claims 6-9, 17, and 18, and respectfully requests that the § 103 rejections be withdrawn.

IV. Conclusion


In view of the foregoing remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account no. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: October 1, 2004

By: 
Anthony A. Hartmann
Reg. No. 43,662